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On December 10 a second lot of heads was secured in the same manner from the same field, and fifteen heads were treated as before; of these, four different heads yielded organisms exhibiting the above reactions characteristic of the colon group, the gas from the dextrose fermentation tubes in this series being more nearly that of the true colon type, varying from thirty to fifty per cent. and with a ratio of two to one.

On January 11 eleven more heads which had been kept in the glass tubes in the laboratory were subjected to the same procedure and one gave exactly the reactions of the *B. coli communis*. In all, therefore, at different times thirty-four heads from this field of rye were studied and from six of them organisms were isolated giving the reactions of the colon bacillus with the ordinary media. It will be recalled that these heads were taken at random over the whole field after they had stood through the storms of the fall, and snow of the early winter. Other heads of the rye gave indications of these acid forms, but did not exhibit the reactions typical of the colon group of organisms so decisively as those included above.

These results possess considerable interest from both the theoretical and practical standpoints. The question as to their origin first naturally arises. It is evident that either: (a) Colon forms must have been transported through the air as dust or carried by insects contaminated with animal excrement and thus deposited on the grain; or, (b) on these grain heads bacteria normally occur which in the several cultural processes exhibit most marked resemblances or absolutely correspond to the *B. coli communis*, or the colon group.

On the first assumption it is difficult to explain the persistence of these forms on grain, and especially on so large a proportion of the heads of grain distributed over an unfertilized field far removed from travel. If, however, this view be untenable, the other proposition must be accepted, viz., that forms of bacteria occur on natural grains closely resembling in their habit the distinctively faecal forms, and which in our present methods of study can not be distinguished from them. It is ex-

tremely suggestive that these forms are so commonly present on most of the cereals thus far studied, being found even, as shown above, on standing grain before its harvesting, with the probabilities so against any contact contamination.

Further, the relation of these forms to the study of the pollution of natural waters is of the utmost importance. Whatever may be the source of the original seeding individual, the fact of their presence on the grain-heads suggests sources for the so-called colon bacilli in streams other than direct sewage pollution, and the presence of such 'colon forms' must be interpreted most carefully. Certainly the old hard and fast rule concerning the significance of the presence of any 'colon forms' as *prima facie* evidence of sewage pollution must needs be most discriminatingly applied.

It is unfortunate that the season of the year and locality where these experiments were carried out requires the postponement of further investigation until another season. Meanwhile the writer would value any suggestions or data bearing on this study, especially from the agricultural experiment stations, the publications from which may contain researches on these grain organisms which thus far have not fallen under his notice.

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#### CURRENT NOTES ON METEOROLOGY.

##### ALTITUDE AND ACCLIMATIZATION IN THE TROPICS.

In a recent summary of the 'Report of the Census of the Philippines' (published April 8) which appears in the *National Geographic Magazine* for April, 1905, the following sentences are found: "That long exposure to the climate is enervating there can be no doubt, but the effect is easily avoided by periodical changes to a colder climate. This has been conclusively proven by the old Scotch, English and other white residents, who, after a residence of over forty years, broken by such removals, enjoy excellent health. Formerly it was necessary to take a sea voyage in order

to find relief, but with the completion of the electric railroad at Baguio, in the province of Benguet, this will no longer be needful, *as the climate at that altitude will afford the requisite change.*" (The italics are those of the compiler of these notes.) A study of the experience of European nations in the tropics leads to a much less optimistic view than that here set forth. Mountain stations, such as Baguio, are important, because they furnish some relief from the heat and humidity of the lowlands, and are above the zone of many tropical diseases, but they *do not solve the problem of acclimatization.* It is the monotony of the climatic conditions in the tropics which is one of the chief difficulties. The 'spur of the seasons,' which is so important an influence in giving the northern peoples their vigor and energy and 'push,' is lacking in the tropics. No mountain climate can supply this missing quality. A change to a colder latitude alone can do it.

#### THE NEW CAPITAL OF ERITREA.

CLIMATIC considerations have been the determining factor in bringing about the selection of a new capital for the Italian colony of Eritrea. The government offices have hitherto been at Massowa, on the Red Sea, where the climate is very trying. The present plan is to remove the seat of government to Asmara, on the high plateau of the hinterland, sixty miles in the interior, and 7,800 feet above the sea. Asmara is above the zone of the typical tropical diseases.

#### THE CLIMATE OF BALTIMORE.

PART 1 b, Special Publication, Vol. II, Maryland Weather Service, 1905, of a 'Report on the Climate and Weather of Baltimore and Vicinity,' by Dr. Oliver L. Fassig, has been issued. Part 1 a was recently mentioned in these notes. The present volume deals with humidity, precipitation, sunshine and cloudiness, winds and electrical phenomena, is a very thorough study, and contains abundant illustrations.

#### MONTHLY WEATHER REVIEW.

*The Monthly Weather Review* for December, 1904 (issued February 28, 1905), contains ar-

ticles of general interest as follows: A review of Woeikof's new text-book of meteorology, by Dr. Stanislav Hanzlik (unfortunately this book is in Russian); a summary of the work done at the Aeronautical Observatory at Tegel, near Berlin, from October 1, 1901, to December 31, 1902; 'Evaporation Observations in the United States,' by H. H. Kimball (read before the Twelfth National Irrigation Congress, El Paso, November 16-18, 1904), accompanied by a chart showing lines of equal depth of evaporation in inches from a free water surface, computed from observations between July, 1887, and June, 1888; 'The Storm and Cold Wave of December 24 to 29, 1904,' by W. J. Bennett; 'Some Relations between Direction and Velocity of Movements and Pressure at the Center of Ellipsoidal Cyclones,' by Dr. Stanislav Hanzlik; 'Nitrogen in Rain Water,' 'The Vapor Pressure of Mercury,' 'Kite Work by the Blue Hill Observatory and the U. S. Weather Bureau.'

R. DE C. WARD.

#### MEMORIAL OF THE OHIO ACADEMY OF SCIENCE ON THE DEATH OF PRO- FESSOR A. A. WRIGHT.

THE executive committee of the Ohio Academy of Science has adopted the following memorial prepared at its request by Professor Lynds Jones in respect to the death of Professor A. A. Wright, of Oberlin, a member and a former president of the academy.

Albert Allen Wright died at his home in Oberlin on April 2, 1905, of acute peritonitis after an illness of scarcely twenty-four hours. Professor Wright was graduated from Oberlin College in 1865, received the degree of A.M. from Oberlin in 1868, the degree of Ph.B. from the School of Mines, Columbia College, 1875, was professor of mathematics and natural science at Berea College, Kentucky, 1870-73, and was called to the chair of geology and natural history of Oberlin College in 1874. With the change of title to professor of geology and zoology his service at Oberlin has been continuous since his first appointment.

Professor Wright was born in Oberlin in 1846. He served as a 100-day man during the closing days of the rebellion, and received his baccalaureate degree the following year at the age of nineteen. He began early to develop his natural taste